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MILK AND MILK PRODUCTS

IN THE NATION'S SCHOOLS

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PREFACE

This study of consumption of milk and milk products in public and private elementary and secondary schools is one in a group evaluating selected aspects of public food distribution programs. Related studies deal with food services offered in the Nation's schools and the market for foods which they create. The research upon which this report is based is part of a broad program designed to expand the market for farm products and provide better nutrition for the Nation.

Many school officials cooperated by making available the data upon which the report is based. Special acknowledgment is made to the Governments Division, U.S. Bureau of the Census, for collection and tabulation of data for the study.

The study was conducted by the Market Development Branch, Economic Research Service, under the general direction of Robert B. Reese. Kenneth E. Anderson and Martin Kriesberg, formerly with this agency, made substantial contributions in the initial planning of the study and in the analysis of data and preparation of findings. Officials of the Consumer and Marketing Service, U.S. Department of Agriculture, gave valuable assistance in planning the study, particularly Samuel C. Vanneman, Acting Assistant Deputy Administrator, Consumer Food Programs, and Herbert D. Rorex, Director, School Lunch Division.

Related reports of the Market Development Branch are:

Anderson, Kenneth E. School Lunch Programs in Elementary and Secondary Schools of the United States. Mktg. Res. Rpt. 262, 48 pp., Aug. 1958.

Anderson, Kenneth E. Milk Consumption in the Nation's Schools. Mktg. Res. Rpt. 284, 29 pp., Nov. 1958.

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HIGHLIGHTS

In the Nation's elementary and secondary schools, the serving of milk is an almost universally accepted practice. Nineteen out of 20 pupils in public and private schools had milk available to them each day during 1962-63.

The 43.7 million pupils enrolled in the 96,000 schools where milk was offered constitute an important market for fluid whole milk. The school milk market takes approximately 5 percent of the milk and cream marketed commercially each year.

The marketing of increasing quantities of milk through schools has contributed to stabilization of the fluid milk market during the past decade. Fluid whole milk consumed in public schools offering lunch services in 1957 had a wholesale value of $192 million. Five years later, the value of milk consumed had risen to $285 million. The fluid whole milk consumed during 1962 in all schools, public and private, at noon or other times, was valued at $312 million. Since there was little change in wholesale prices, gains in money value reflect increases in actual milk consumption.

This expansion has resulted from increased availability of school milk and higher average consumption levels among the children to whom the milk was offered. During 1962, consumption per pupil enrolled was valued at $10.02, against $8.94 per pupil during 1957.

Most of the school milk consumption now occurs in schools affiliated with the Special Milk or National School Lunch Programs of the U.S. Department of Agriculture. Only 2.8 million children, out of 43.7 million to whom milk was available, were enrolled in schools not affiliated with either program.

During 1962, approximately 32.1 million children attending schools under the National School Lunch Program could obtain a plate lunch including a half-pint of milk. Nearly 29 million of these pupils could obtain additional milk at reduced prices under the Special Milk Program. An additional 8.8 million pupils who were enrolled in schools where plate lunches under the National School Lunch Program were not offered could obtain milk under the Special Milk Program at noon or other times of the day.

A total of 37.8 million children could obtain milk in 1962 at about 3 cents per half-pint less than cost under the Special Milk Program. In schools participating in the milk program, approximately 700,000 needy children were receiving milk at further reductions in price, or free. Gift milk accounted for almost 6 percent of total consumption under the Special Milk Program.

Needy children also were receiving a half-pint of milk each day as a part of the plate lunches they were receiving free or at reduced price under the National School Lunch Program. During the school year in which the survey occurred, needy children received nearly 10 percent of the total plate lunches served under this program.

Most of the milk was consumed at lunch time. Approximately 45 percent was consumed with plate lunches obtained under the National School Lunch Program. An additional 37 percent was drunk at lunch time in the same group of schools by pupils not eating the plate lunches. About 8 percent was served at noon and other times in schools offering lunch services outside of the National School Lunch Program. The other 10 percent was served in schools where no lunch services were offered.

Morning and afternoon milk breaks are becoming more common. In about 45 percent of the schools offering milk, this service was available at least twice a day. In about 15 percent of these schools, milk was offered 3 times each day.

Average levels of milk consumption were found to increase substantially with the number of times milk was offered each day. Where milk was offered only once, average daily consumption was about 0.7 half-pint per pupil. When milk was available 3 times a day, average consumption rose to 1 half-pint.

Soft drinks were available in slightly over 10 percent of the schools offering milk. Some substitution of soft drinks for milk was indicated in schools where milk was offered 3 or more times each day.

Price is an important element in the school milk market. Under the Special Milk Program, average prices paid by pupils in the different regions ranged from 2.4 cents to 4.1 cents per half-pint. Milk sold outside the program generally cost more--averages ranged from 4.2 cents to 5.5 cents per half-pint. Responsiveness to price is reflected in the fact that average daily consumption by pupils in schools under the Special Milk Program was 50 to 100 percent above that by pupils in schools outside of the Program.

Looking to the future, it appears that expansion of the school milk market is inherent in the continuing growth of the school population. Substantial gains also could result from increased use of morning and afternoon milk breaks in the more than 45,000 schools where milk is offered only once during the day. Also, there are still about 2.2 million pupils enrolled in schools where no milk service is offered. Further substantial gains, however, are predicated upon continuing availability of milk at reduced prices.

MILK AND MILK PRODUCTS IN THE NATION'S SCHOOLS

By William H. Freund and Robert B. Reese, agricultural economists,
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INTRODUCTION

The practice of providing milk for children in the Nation's schools is now well established. A large proportion of the schools serve milk as part of a complete lunch service, and some of them supplement food service with milk at other times of the day. Many schools without lunch programs serve milk only.

Milk service has been provided in some schools for many years. Under the National School Lunch Program, which was inaugurated in 1946, plate lunches include a half-pint of fluid whole milk.

Additional impetus for expanding milk consumption in schools came with the initiation of the Special Milk Program in 1954, pursuant to Public Law 690. In that year Congress amended a price support provision of the Agricultural Act of 1949 to include milk service in public and private schools. The purpose of the legislation, as expressed in the act, was ... "to increase consumption of milk by children in nonprofit schools of high school grade and under." In the 1955 fiscal year, $50 million was authorized for the program and this has been increased in subsequent years to an annual level of approximately $100 million. Beginning with the 1957 fiscal year, the program was broadened to include summer camps, nursery schools, orphanages, and similar child care institutions.

The Department of Agriculture maintains a system of reimbursement, or incentive payments, to schools for each half-pint of milk consumed other than with lunches provided under the National School Lunch Program. These payments have made it possible for schools to initiate or to expand nonprofit milk services by offering milk at reduced prices. The average rate of reimbursement for milk sold to children under the Special Milk Program has been around 3 cents a half-pint. A nonprofit requirement helps to assure that the milk will be made available at low prices. The Federal payment, which in some instances is as much as one-half or more of the cost of milk, is passed on to the school children in the form of lower milk prices. Needy children in schools located in especially needy areas may receive milk at even lower prices or without charge.

Administration of both the Special Milk Program and the National School Lunch Program in the States and territories is the responsibility of the State Departments of Education or other designated State agencies. The Consumer and Marketing Service, U.S. Department of Agriculture, administers the program directly for private schools and child care agencies in a few States where no State agency has been authorized to administer these segments of the overall programs.

The Special Milk Program has encouraged expanded consumption of milk in schools by increasing availability of milk and reducing the price paid by pupils. Many schools which formerly provided no milk services now participate in the program, and other schools which used to offer milk only at lunch time now also provide morning and afternoon milk service.

The school milk market constitutes an important segment of total fluid milk marketings. Approximately 5 percent of the fluid milk and cream consumed by civilians in 1962 was distributed under the National School Lunch and Special Milk Programs. Increasing quantities of milk distributed through these programs have contributed to stabilization of the fluid milk market during the past decade--helping to counteract a slight downward trend in total consumption.

This study is concerned with where, when, and at what price milk is made available in schools. It also explores the potentials for further expansion in consumption of milk and other dairy products in schools.

The report is based upon findings from two surveys. A national survey of school food services was conducted during March 1962 in a randomly selected sample of about 5,000 public and 1,000 private elementary and secondary schools. A second survey of the market for food in schools was carried out during 1962-63 in a subsample of schools providing food services. Similar information available on the schools during the 1957-58 school year provides a benchmark for measuring recent changes in patterns of food use. 1/

Special emphasis was placed upon milk consumption in the basic surveys. Findings in this report supplement information contained in related publications. 2/

AVAILABILITY OF MILK IN SCHOOLS

In March 1962, almost 96,000 (86 percent) of the Nation's schools served milk for their children (table 1). These schools had an enrollment of about 43.5 million pupils. Although most of the schools served milk as part of a lunch program, approximately 23,000 served milk only and had no food service. About 16,000 schools with an enrollment of 2.2 million served neither milk nor food.

Most of the schools providing milk service also had a school lunch program. Of the schools serving milk, 72,700 had some kind of food service, 66,700 offered complete plate lunches under the National School Lunch Program, 3,700 not in the national program also had other lunches, and slightly over 2,000 offered a la carte service only. About 12 percent of the children in public schools and 45 percent of the private school pupils had milk but no lunch service. Approximately 4 percent in the public schools and 9 percent in the private schools had neither milk nor food service available (table 2).

1/ 1957-58 survey data may be obtained from Marketing Research Reports 262, 284, and 377. See Preface for complete citations.

2/ See Preface for list of related publications.

Table 1.--Availability of milk in public and private elementary and secondary schools, United States, March 1962

Type of program	Schools offering--				
	Plate lunches under National School Lunch Program 1/	Other plate lunches 1/	A la carte only	No lunch services	Total
	Thousands				
Serving milk:					
Special Milk Program	58.8	2.3	1.1	19.9	82.1
National School Lunch Program only	7.9	---	---	---	7.9
Local nonaffiliated	---	1.4	1.0	3.5	5.9
Total	66.7	3.7	2.1	23.4	95.9
No milk service	---	.1	---	15.9	16.0
Grand total	66.7	3.8	2.1	39.3	111.9

1/ May have provided a la carte service also.

The pattern of milk service in the Nation's schools varied somewhat by location and other school characteristics. The percentage of pupils having access to milk and lunch services was highest in schools in the rural areas, those with enrollments of over 250 pupils, and those at the secondary grade level (or where elementary and secondary levels were combined). Conversely, the percentage of pupils having access only to milk services was greatest in urban areas, schools with smaller enrollments, and those located in the Northeast and West.

Eighty-six percent of the schools serving milk participated in the Special School Milk Program, enabling them to serve milk to their 37.7 million pupils at special prices. The proportion of participating public schools was 87 percent, and of private schools, 76 percent (table 3).

Comparisons with 1957 show a substantial growth, mostly under the Special Milk Program, in the number of public schools and public school pupils having milk service available. In 1962, 86 percent of the public schools provided milk service; in 1957 it was 74 percent. About 38 million public school pupils had milk available in March 1962, compared with 30 million 5 years earlier--an increase of more than 25 percent.

Table 2.--Pupils in public and private schools serving milk, by type of lunch service, March 1962 1/

Item	Pupils in schools serving milk								Total pupils		
	Complete plate lunch under NSLP		Other plate lunches		A la carte only		Milk only		In schools serving milk	In all schools	Percentage in schools serving milk
	Thou.	Pct. 2/	Thou.	Pct. 2/	Thou.	Pct. 2/	Thou.	Pct. 2/	Thou.	Thou.	Pct. 3/
United States	32,114	73	2,458	6	2,032	5	7,076	16	43,680	45,892	95.1
Regions:											
Northeast	8,466	70	555	5	223	2	2,720	23	11,962	12,718	94.0
Southeast	7,143	87	508	6	214	3	347	4	8,213	8,356	98.2
Midwest	8,112	68	511	4	586	5	2,821	23	12,031	12,921	93.1
Southwest	4,000	81	403	8	258	5	317	6	4,977	5,204	95.6
West	4,393	68	482	7	752	12	870	13	6,497	6,692	97.0
Schools located in:											
Counties under 100,000 population	14,256	85	300	2	289	2	1,748	11	16,593	17,264	96.1
Counties of 100,000-1,050,000 population	12,763	71	1,039	6	939	5	3,143	18	17,884	18,759	95.3
21 largest metropolitan areas	5,095	55	1,119	12	805	9	2,185	24	9,204	9,869	93.2
Size of schools (pupil enrollment):											
Under 250	2,645	65	82	2	28	1	1,312	32	4,068	4,638	87.7
250-499	8,131	74	370	3	149	1	2,375	22	11,026	11,656	94.5
500 or more	21,336	75	2,006	7	1,854	6	3,389	12	28,586	29,598	96.5
Grades taught:											
Elementary	16,488	68	1,148	5	268	1	6,157	26	24,062	25,925	92.8
Junior and senior high	10,677	76	1,111	8	1,702	12	556	4	14,047	14,314	98.1
Other combinations	4,949	89	200	4	62	1	362	6	5,572	5,652	98.5

1/ In this and other tables, the components of each classification may not add to the U.S. total owing to sampling variability.
2/ As a percentage of enrollment in all schools serving milk.
3/ As a percentage of total school enrollments.

Table 3.--Pupils in public and private schools affiliated with the Special Milk Program, by type of food service, March 1962

Item	In schools serving--						In all schools under the Special Milk Program
	Complete plate lunch under NSLP		Other plate lunches and a la carte		Milk only		
	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands
United States	28,981	77	2,933	7	5,860	16	37,774
Regions:							
Northeast	7,635	75	347	4	2,144	21	10,126
Southeast	6,480	88	529	8	257	4	7,265
Midwest	7,630	70	750	7	2,481	23	10,861
Southwest	3,411	85	317	8	267	7	3,996
West	3,824	69	989	18	711	13	5,524
Schools located in:							
Counties under 100,000 population	12,946	88	392	2	1,496	10	14,834
Counties of 100,000-1,050,000 population	11,606	74	1,272	9	2,617	17	15,496
21 largest metropolitan areas	4,428	60	1,269	17	1,747	23	7,444
Size of schools (pupil enrollment):							
Under 250	2,288	65	62	2	1,148	33	3,498
250-499	7,304	77	275	3	1,942	20	9,521
500 or more	19,388	79	2,595	10	2,769	11	24,754
Grades taught:							
Elementary	14,698	70	938	5	5,246	25	20,883
Junior and senior high	9,644	81	1,907	16	339	3	11,890
Other combinations	4,639	94	86	1	274	5	4,999

Milk Consumption in School Year 1962

Approximately 5 percent of the milk and cream marketed commercially each year is consumed in the schools. During the survey month of March 1962, more than 700 million half-pints of milk were used by schools serving milk. Public schools alone accounted for 624 million half-pints during March 1962; this compares with 439 million half-pints served by public schools during the 1957 survey month.

Forty-five percent of the milk consumed during the survey month was served with complete meals under the National School Lunch Program, 37 percent was served at times other than during the lunch period in National School Lunch Program schools, 8 percent was served at lunch time and at other times in schools serving food but not under the national program, and 10 percent was served in schools where other food was not served (table 4). Milk service without food was most often found in the schools of urban areas and those with enrollments of less than 250, especially at the elementary grade level.

Milk and milk products, excluding butter, delivered to schools with food service during 1962-63 had a wholesale value of about $372 million (table 5). Fluid whole milk, about 42 percent of which was consumed apart from the lunch service, accounted for $312 million of this total. It is estimated that an additional $30 million worth of fluid milk was consumed in schools where no food service was offered.

Although fluid milk accounts for about 84 percent of the total value of all dairy products (excluding butter) delivered to the schools in 1962-63, other milk products with a value of approximately $60 million were consumed in the schools during the year. Of this amount, ice cream accounted for almost $30 million and cheese almost $25 million. The processed types of cheese had a value of almost $18 million.

Butter was one of the principal milk products used in school lunch services. Almost 100 million pounds were delivered to the school market during the 1962-63 school year. This represents a value of $58.5 million. Most of the butter used in school feeding services was donated by the Federal Government under provisions of price support and surplus removal legislation.

During the 1962-63 school year, about $12 worth of milk and milk products, exclusive of butter, were consumed per pupil enrolled in schools serving food. Of this sum, about $10 represents fresh fluid milk and almost one dollar represents ice cream. About $0.80 worth of cheese, mostly processed, was consumed per student during the year. About $1.90 worth of butter per capita was consumed during this period.

Most of the milk consumption took place within the framework of the Special Milk Program and the National School Lunch Program. Schools operating under one or both of these programs accounted for 95 percent of all milk used in the Nation's schools.

Table 4.--Milk served with and without lunches in public and private schools, by type of lunch service, United States, March 1962

Item	Complete plate lunch under National School Lunch Program 1/				Other plate lunches and a la carte				Milk only		All schools serving milk	
	Milk with lunch		Milk other than with lunch		Milk with lunch		Milk other than with lunch					
	Mil. half-pints	Percent	Mil. half-pints	Percent	Mil. half-pints	Percent	Mil. half-pints	Percent	Mil. half-pints	Percent	Mil. half-pints	Percent
United States	322.0	45	261.4	37	33.0	5	21.4	3	69.5	10	707.2	100
Regions:												
Northeast	72.0	41	73.9	42	4.2	2	3.4	2	23.3	13	176.8	100
Southeast	83.1	58	47.5	33	6.7	5	4.2	3	2.9	1	144.4	100
Midwest	83.9	38	86.4	40	10.4	5	5.3	2	32.0	15	217.9	100
Southwest	47.8	57	25.9	31	3.8	5	3.5	4	3.0	3	84.0	100
West	35.3	42	27.7	33	8.1	9	4.9	6	8.4	10	84.0	100
Schools located in:												
Counties under 100,000 population	169.1	55	110.1	36	5.3	2	2.3	1	17.6	6	304.3	100
Counties of 100,000-1,050,000 population	120.0	42	107.1	38	15.8	6	10.2	3	30.6	11	283.7	100
21 largest metropolitan areas	32.9	28	44.2	37	11.9	10	8.9	7	21.3	18	119.1	100
Size of schools (pupil enrollment):												
Under 250	36.7	45	26.1	32	1.5	2	1.1	1	16.4	20	81.9	100
250-499	97.8	50	65.9	34	4.7	2	3.4	2	23.7	12	195.3	100
500 or more	187.6	44	169.3	39	26.9	6	16.9	4	29.4	7	430.2	100
Grades taught:												
Elementary	176.1	45	133.3	34	8.7	2	9.7	3	62.9	16	390.8	100
Junior and senior high	84.0	41	85.6	42	21.4	10	10.2	5	3.4	2	204.6	100
Other combinations	62.0	55	42.5	38	2.8	3	1.4	1	3.1	3	111.8	100

1/ A la carte food service may have been offered.

Table 5.--Value of milk and milk products used in public and private schools with lunch programs, total and per pupil, July 1962-June 1963

Item	Total	Per pupil 1/
	Million dollars	Dollars
Milk and milk products	372.0	12.04
Fresh fluid milk	311.9	10.10
Whole milk	262.0	8.48
Chocolate milk	49.6	1.61
Other	.3	.01
Processed milk	.4	.01
Cream, all types	.9	.03
Ice cream	29.3	.95
Cheese	24.7	.80
Cottage	2.0	.07
Natural	4.9	.16
Processed	17.8	.58
Nonfat items	4.7	.15
Butter	58.5	1.90

1/ Because of rounding, detail may not add to totals.

Trends in Consumption

Consumption of milk and dairy products in the schools has increased substantially in the 5-year period 1957-62. This is evident in total consumption and in consumption per capita. Fresh fluid milk consumed in public schools where food service was available had a value of $285 million during the 1962-63 school year compared with $192 million during 1957-58. The value of fluid milk consumed per pupil in these public schools was $10.02 in 1962-63 compared with $8.94 in 1957-58 (table 6). For all schools, public and private, offering milk in 1962, the average was slightly higher--about $10.10 per pupil (table 5). Although more milk products were used in 1962-63 than in 1957-58, the patterns of use by schools in the various categories were similar during both periods.

Among all public schools serving milk, average daily consumption of milk in 1962-63 was about 0.8 half-pint per child enrolled; in 1957-58 the comparable figure was 0.7 half-pint. Increased per capita consumption was especially evident in the Midwest and among schools of the rural areas, where in 1962-63 consumption was as high as 1.0 half-pint per pupil daily.

There was less change in consumption of other milk products than of fluid milk during the 5-year period studied. On a per capita basis, the value of milk products consumed, other than butter, stood at $1.98 in 1962-63 compared with $1.82 in 1957-58. However, this chiefly reflects a change in price level, as approximately the same quantities per capita were used during both periods.

Table 6.--Value of milk and milk products used in public schools operating a lunch program, 1962-63 compared with 1957-58

Item	Fresh fluid milk				Other milk products excluding butter			
	1962-63		1957-58		1962-63		1957-58	
	Total	Per pupil	Total	Per pupil	Total	Per pupil	Total	Per pupil
	Mil. dol.	Dollars	Mil. dol.	Dollars	Mil. dol.	Dollars	Mil. dol.	Dollars
United States	285.2	10.02	192.3	8.94	56.5	1.98	37.9	1.82
School location:								
Urban	190.5	9.34	123.9	8.60	42.9	2.10	25.5	1.88
Rural	94.7	11.72	69.4	9.77	13.6	1.69	12.4	1.75
Grades taught:								
Elementary	129.0	10.87	149.4	9.40	23.2	1.95	26.5	1.66
Secondary	156.2	9.40	43.9	7.84	33.3	2.02	11.4	2.04

Table 7.--Consumption per pupil of milk and milk products in public and private schools under Federal programs and in schools operating apart from Federal programs, July 1962-June 1963 1/

Schools with--	Fluid milk	Other milk products, excluding butter	Butter	Total milk products
	Dollars	Dollars	Dollars	Dollars
National School Lunch program:				
Plate lunches only	11.36	1.89	2.03	15.28
Plate lunches and a la carte	7.65	2.07	1.58	11.30
Other food service	7.16	1.98	1.74	10.88
Special Milk Program 2/	10.47	2.01	1.90	14.38
No Federal milk program	7.28	1.48	1.89	10.65

1/ Based on average daily attendance.
2/ Including schools in and out of the National School Lunch Program.

Total consumption in public schools of processed milk products in 1962-63 was valued at $56.5 million compared with $38.9 million in 1957-58. This increase reflects both the growth enrollment among schools offering lunch service and changes in price level since 1957.

FACTORS AFFECTING MILK CONSUMPTION IN THE SCHOOLS

Milk consumption in the schools is affected by several factors. Among the principal ones are (1) participation in the Federal lunch and milk programs, (2) prices that pupils pay for the half-pint serving of milk, (3) frequency of service in the schools, and (4) the form of milk service provided.

Participation in Federal Programs

Measured in half-pints per pupil enrolled, fluid milk consumption was highest in schools having both the National School Lunch and the Special Milk Programs, as shown in the following tabulation:

Item	Daily consumption of fluid milk per pupil enrolled
	Half-pints
All schools:	
Special Milk Program	0.8
Others	.5
NSLP schools:	
Special Milk Program	.9
Others	.7
Schools with milk only:	
Special Milk Program	.5
Others	.3

Per capita consumption of milk and dairy products measured by dollar value was also higher among schools operating under the Federal programs. Per capita consumption was highest in schools under the National School Lunch Program where only plate lunches were offered (table 7). In schools offering a la carte service in addition to National School Lunch Program plate lunches, and in schools operating apart from the Federal programs, consumption of milk was substantially lower. Consumption of other milk products (excluding butter) was somewhat higher in these schools, probably owing to the use of cheese in sandwiches.

Prices that Pupils Pay

More milk was consumed per pupil in schools where milk was offered at lower prices. In public schools under the Special Milk Program, where prices paid by pupils averaged 3.1 cents, consumption was about 0.8 half-pint daily (table 8).

In public schools not participating in the Special Milk Program, average milk prices were higher--about 4.6 cents per half-pint. Average daily consumption was 0.5 half-pint per pupil. For the portion of these schools in the National School Lunch Program, average prices were somewhat lower (4.2 cents) and consumption levels (0.6 half-pint per pupil) somewhat higher than the averages for all schools with independent milk service programs.

Among private schools, the same relationships prevailed between prices paid and milk consumed. Prices per half-pint of milk again were lower in schools associated with the Special Milk or National School Lunch Programs. Children paid higher prices for their milk in unaffiliated schools. In general, prices paid for milk in the private schools were fractionally more than in the public schools.

There were also some price differences by school location and size among program participants: Children of public schools under the Special Milk Program paid less than 3 cents on the average in the Midwest and Southwest but more than 4 cents in the West. Children in smaller schools and those located in rural areas paid less than children enrolled in the larger schools and those located in urban areas.

Times Served

Milk may be served in the school more than once during the day. Where there is a food service and milk is served one time, it is usually in conjunction with the lunch. Where milk is served more than once, it is available at the lunch period and in the morning or afternoon--in some schools at both periods.

Among the Nation's 83,000 public schools serving milk, 55 percent served milk once, 29 percent served it twice and 16 percent had milk available three times a day.

Soft drinks were offered in 7,000 schools (less than 10 percent of the schools serving milk). In these schools, soft drinks were usually available at the same time as milk (table 9).

Daily consumption of milk was about 0.7 half-pint per pupil enrolled in public schools serving milk only once each day. Per capita consumption increased to 0.9 half-pint when milk was offered two times and to 1.0 half-pint when milk was available three times daily.

When soft drinks were available, milk consumption dropped in some instances. This was evident particularly among schools where soft drinks as well as milk were available three times a day. In these schools, average daily consumption of milk per pupil was 0.6 half-pint.

Table 8.--Prices charged in public schools for school milk, and amount consumed per pupil, by type of program, March 1962

Item	All schools with--				NSLP schools with--			
	Special Milk Program		Other milk service		Special Milk Program		Other milk service	
	Price per half-pint	Per capita use per day	Price per half-pint	Per capita use per day	Price per half-pint	Per capita use per day	Price per half-pint	Per capita use per day
	Cents	Half-pints	Cents	Half-pints	Cents	Half-pints	Cents	Half-pints
United States	3.1	0.8	4.6	0.5	3.0	0.9	4.2	0.7
Regions:								
Northeast	3.3	.8	4.2	.4	3.2	.8	4.1	.5
Southeast	3.6	.9	5.4	.6	3.5	.9	5.1	.8
Midwest	2.4	1.0	4.2	.5	2.2	1.1	2.6	.7
Southwest	2.9	.9	5.5	.6	2.8	.9	3.6	.7
West	4.1	.6	4.2	.5	3.9	.7	4.5	.7
Schools located in:								
Counties under 100,000 population	2.8	1.0	4.4	.7	2.7	1.0	4.6	.7
Counties of 100,000-1,050,000: population	3.3	.8	4.5	.5	3.2	.8	4.1	.7
21 largest metropolitan areas	3.3	.6	4.8	.4	3.0	.7	3.3	.4
Size of schools (pupil enrollment):								
Under 250	2.9	1.1	4.2	.8	2.6	1.2	4.7	.9
250-499	2.9	.9	4.1	.6	2.8	1.0	4.3	.8
500 or more	3.2	.8	4.8	.5	3.1	.8	4.0	.6
Grades taught:								
Elementary	3.1	.9	4.3	.6	3.9	.9	4.4	.8
Junior and senior high	3.2	.7	5.1	.4	3.1	.8	3.6	.5
Other combinations	2.7	1.1	4.3	.6	2.7	1.1	4.6	.7

Table 9.--Availability of milk and soft drinks relative to average daily milk consumption by pupils in public schools, March 1962 1/

Availability of soft drinks	Schools in which milk is offered daily				Average daily milk consumption per pupil in schools offering milk daily			
	Once	Twice	Three times or more	Total	Once	Twice	Three times or more	Average
	----- Thousands -----				----- Half-pints -----			
None	41.7	21.5	10.6	73.8	0.7	0.9	1.0	0.8
Once	2.6	.8	.5	3.9	.6	.8	.9	.7
Twice	.4	1.6	.4	2.4	.7	.9	.8	.8
Three or more times	.6	.4	1.7	2.7	.7	.8	.6	.6
Total	45.3	24.3	13.2	82.8	--	--	--	--

1/ Some variations due to rounding.

The pattern in private schools is similar: Average per capita consumption of milk is higher in schools serving milk more than once, but availability of soft drinks reduces milk consumption, particularly when soft drinks are available several times a day together with milk.

Forms of Milk Service

Consumption of milk is affected by the manner in which it may be procured by students. In the great majority of public schools, the child receives the milk on a counter service basis in a personal transaction with teachers or other school personnel. Some schools supplement this service with vending machines and some provide milk only through vending machines.

Almost 6,000 of the public schools serving milk had vending machines in 1962, and in 3,700 this was the only form of milk service. About 550 private schools had vending machines for milk. In most of these it was the only way in which milk was sold.

The average daily consumption of milk was a little higher in schools with counter service (0.8 half-pint per pupil) than in schools where vending machines were the only way of procuring milk. On the other hand, where vending machines were used additionally, consumption averaged 1.1 half-pints per pupil. It is likely that this rate was attained because the vending machines in many of these schools provided milk services at times in addition to the lunch period.

ACQUIRING MILK AND MILK PRODUCTS

Fresh fluid milk and frozen daily products served in the schools were bought entirely through regular market channels in the 1962-63 school year--mostly through processors, wholesalers, or distributors (table 10). In contrast, most of the butter, cheese, and nonfat dry milk used in schools was donated from price support inventories by the Federal Government.

NEEDY PUPILS AND MILK SERVICE IN THE SCHOOLS

During March 1962 about 675,000 needy pupils (as defined by responsible local school officials) in public schools received milk without charge (table 11). Another 99,000 needy pupils in private schools were provided milk without charge. This was over and above milk consumed as a part of lunches provided free or at reduced cost under the National School Lunch Program. As many as 1 million needy pupils were receiving lunches at reduced price during the same period.

Needy pupils in public schools receiving free milk were 1.8 percent of those enrolled; in schools where milk only was served, the needy pupils were 2.5 percent of those enrolled. The percentages were about the same in private as in public schools. The proportion of children receiving free milk was highest in public schools of the Northeast; in this region, 3.5 percent of the children in schools serving only milk were being provided free milk.

Table 10.--Sources of milk and dairy products used in public schools, July 1962-June 1963

Product	Quantity	Source			
		Processor, wholesaler, or distributor	Retail food store	Federal donations	Total
	Mil. lbs.	Percent	Percent	Percent	Percent
Fluid whole milk	2,614.0	97	3	--	100
Cheese	56.3	9	1	90	100
Ice cream and other	82.7	98	2	--	100
Nonfat dry milk	23.1	1/	1/	98	100
Butter	89.7	1/	1/	99	100

1/ Source of commercial purchases not identified.

Table 11.--Needy pupils receiving milk free or at reduced price in public schools, by type of food service, March 1962 1/

Item	Pupils in schools offering--				All pupils receiving free milk
	Complete plate lunch under National School Lunch Program	Other plate lunches	A la carte only	Milk only	
	Thousands				
United States	438.1	117.3	5.0	113.7	674.1
Regions:					
Northeast	132.3	83.9	1.7	58.5	276.3
Southeast	89.0	4.1	1.2	5.9	100.2
Midwest	130.8	27.3	1.2	31.1	190.4
Southwest	51.2	1.9	.8	8.8	62.7
West	34.9	.1	2/	9.5	44.5
Schools located in:					
Counties under 100,000 population	259.2	29.4	1.6	35.0	325.2
Counties of 100,000-1,050,000 population	114.1	3.9	1.3	36.3	155.5
21 largest metropolitan areas	64.9	84.0	2.1	42.5	193.4
Size of schools (pupil enrollment):					
Under 250	96.9	1.6	2/	37.4	136.0
250-499	143.2	12.2	.7	36.0	192.1
500 or more	198.0	103.5	4.2	40.2	346.0
Grades taught:					
Elementary	306.2	104.0	2.4	106.1	518.8
Junior and senior high	49.5	.4	2.3	5.6	57.8
Other combinations	82.4	12.9	.2	1.9	97.4

1/ Excludes milk offered as part of a plate lunch.
2/ Less than 50 pupils.

Needy pupils in the public schools accounted for a larger than proportionate share of the total milk consumption in these schools. Among all public schools participating in the Special Milk Program, needy pupils consumed 5.6 percent of the milk served (table 12). The percentage was about the same in private schools. The highest proportion of milk going to needy pupils was reported in the Northeast and among the rural areas of the country. The needy in schools of less than 250 pupils accounted for a higher proportion of the milk consumed than in schools with larger enrollments.

EXPANDING MILK CONSUMPTION

Consumption of milk in schools has expanded greatly since inception of the Special Milk Program in 1955. Milk is now available to about 19 out of 20 pupils enrolled in the Nation's elementary and secondary schools. Further expansion of the school market for milk will result primarily from increased school enrollments. By 1975, school enrollments may range from 52 to 58 million persons. A school population of 55 million would represent a gain of almost 20 percent from 1962-63, the survey period. If present average consumption levels hold, a comparable increase in quantities of milk used in schools would be anticipated.

However, milk consumption levels probably could also be expanded through increasing the frequency with which milk is made available each day. In more than one-half of the schools offering milk, service is provided only once each day. Milk is offered three times daily in only 14 percent of these schools. Since the second and third offerings each appear to increase average daily milk consumption per pupil enrolled by 0.1 half-pint or more, substantial gains could result from such action.

A second approach to expanding milk consumption involves that twentieth child who does not have access to school milk. There is no major pocket of nonavailability. Percentagewise, the small schools have the least coverage--about 13 percent of the pupils enrolled in these schools cannot get milk. Numerically, however, most of the children who cannot obtain school milk are in schools with 250 or more pupils. Most of these pupils are in elementary schools. Also, most of them reside in the Northeast and Midwest.

Further information is needed as to why 2.2 million children are not offered milk service in their schools. These schools are the exceptions. There must be special reasons for nonparticipation, some of which may be singular to individual schools.

Table 12.--Percentage of milk served free or at reduced price to needy pupils in public schools participating and not participating in the Special Milk Program, March 1962 1/

Item	In schools with Special Milk Program	In schools without Special Milk Program
	Percent	Percent
United States	5.6	8.2
Regions:		
Northeast	6.3	20.1
Southeast	6.1	6.6
Midwest	5.4	4.7
Southwest	6.0	4.6
West	3.0	2.0
Schools located in:		
Counties under 100,000 population	7.2	6.0
Counties of 100,000 - 1,050,000 population	2.9	3.5
21 largest metropolitan areas	7.7	21.7
Size of schools (pupil enrollment):		
Under 250	10.6	11.7
250-499	6.5	5.2
500 or more	4.2	8.8
Grades taught:		
Elementary	6.7	8.8
Junior and senior high	2.6	6.5
Other combinations	7.6	8.8

1/ Excludes milk included in plate lunch.

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